

REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested. Upon entry of this Amendment, claims 1-4, 7-12, 14-18, and 21-51 will be pending.

It is noted with appreciation that the Examiner has indicated that claim 26 is allowed and claim 41 would be allowed if rewritten in independent form. Claim 41 has been rewritten in independent form, including all of the limitations of the base claim and the intervening claims.

The Examiner has rejected claims 31-33 and 43-45 under 35 U.S.C. §102(b) as being anticipated by Zarling et al. The Examiner suggests that Zarling teaches an apparatus that can be used for examining a particle in a flow stream of a flow cytometer comprising a light emitting device which can comprise at least one light emitting diode adapted to emit light toward a flow stream, a detector adapted to detect light emanating from said particle in response to said emitted light striking said particle, and a controller adapted to control said light emitting device to emit light in pulses.

Independent claims 31 and 43 have been amended to further define the pulses generated by the controller. As presently claimed, the controller generates pulses having a light intensity higher than that which could be maintained in continuous mode. Zarling does not teach or suggest a controller adapted to generate pulses having this greater intensity. This feature advantageously allows the light emitting device to emit light at this greater intensity in short bursts, so that in embodiments having more than one detector, or more than one light source, the higher intensity pulse of light assists in synchronizing detectors and light sources, and in distinguishing light

emanating as a result of the pulsed light source from light generated by one or more continuous light sources. None of the cited references teach or suggest this feature or the advantages that could be achieved by this feature. Claims 32, 33, 44 and 45 depend from independent claims 31 and 43. Therefore, Applicants request allowance of these claims.

The Examiner has rejected claims 1-3, 7-10, 15-17, 21-24, 27 and 29 under 35 U.S.C. §103(a) as being unpatentable over Yamamoto et al. in view of Kusuzawa and further in view of Marzari et al. The Examiner suggests that Yamamoto discloses an apparatus for examining a particle in a flow stream of a flow cytometer comprising a light emitting device comprising one incoherent light emitting semiconductor device adapted to emit light toward the flow stream, and a detector adapted to detect light emanating from the particle in response to emitted light striking the particle.

The Examiner admits that Yamamoto does not teach or suggest a second system for detecting the particle so that the first system can analyze the particle. However, the Examiner suggests that it would have been obvious to one of ordinary skill in the art to add a second detection system in order to detect the particle, and to control the first light source to image the particle once it has been detected. As an example, the Examiner cites Kusuzawa, which allegedly discloses an apparatus for examining a particle in a flow stream of a flow cytometer, that includes a substantially coherent light used to detect a particle and to control another pulsed light. Furthermore, while the Examiner admits that neither reference teaches controlling the light emitting device to emit light in pulses having a duty cycle less than about 10%, the Examiner suggests that it is very well known in the art to control a light-emitting device to have a duty cycle less than 10%.

Independent claims 1 and 15 have been amended to further define the pulses as having a greater intensity during the pulse duty cycle than that which could be maintained in continuous mode. As discussed above, this feature advantageously allows the light emitting device to emit light at this greater intensity in short bursts, so that in embodiments having more than one detector, or more than one light source, the higher intensity pulse of light assists in synchronizing detectors and light sources, and in distinguishing light emanating as a result of the pulsed light source from light generated by one or more continuous light sources. None of the cited references teach or suggest this feature or the advantages that could be achieved by this feature. Therefore, the Examiner's rejection should be withdrawn and claims 1-3, 7-10, 15-17, 21-24, 27 and 29 should be allowed.

The Examiner has rejected dependent claims 4, 18, 28 and 30 under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Kusuzawa and Marzari et al., and further in view of Unterleitner. The Examiner cites Unterleitner as disclosing a flow cytometer having two excitation light sources of different wavelengths. As discussed above, claims 1 and 15 have been amended to further define the pulses generated as having a greater light intensity than that which could be maintained in continuous mode. While Unterleitner is cited as teaching two excitation light sources of different wavelengths, Unterleitner does not make up for the deficiency noted above with respect to the pulses having a light intensity that is greater than could be maintained in continuous mode. Therefore, because claims 4, 18, 28, and 30 depend from independent claim 1 and 15, the Examiner's rejection should be withdrawn in view of the amendment. Allowance of claims 4, 18, 28 and 30 is requested.

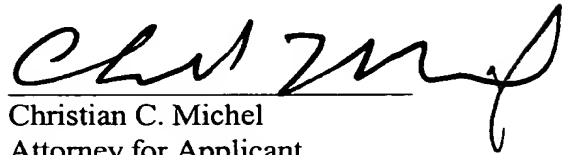
The Examiner has also rejected 11, 12, 14 and 25 as being unpatentable over Yamamoto in view of Kusuzawa and Marzari et al., and further in view of Hoffman et al. The Examiner cites Hoffman as disclosing a light-obstructing device. However, Hoffman does not teach or suggest generating pulses having a light intensity greater than that which could be maintained in continuous mode, as required in amended claims 1 and 15, discussed above. Because claims 11, 12, 14 and 25 depend from independent claims 1 and 15, the Examiner's rejection should be withdrawn. Allowance of claims 11, 12, 14 and 25 is requested.

Claims 34-38 and 46-50 have been rejected by the Examiner under 35 U.S.C. §103(a) as being unpatentable over Zarling et al. in view of Kusuzawa. Also, claims 39-40, 42 and 51 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Zarling et al., in view of Hoffman et al.

Independent claims 31 and 43 have been amended to further define the pulses generated by the controller. Claims 31 and 43 now define the pulses as having a light intensity greater than that which could be maintained in continuous mode. None of the cited references teach or suggest this feature. As discussed above, this feature of the claimed embodiments allows the apparatus to take advantage of brighter pulses of light, which assists in detecting features of the particles, among other advantages. Claims 34-40, 42 and 46-51 depend from independent claims 31 and 43. Because none of the cited references teach or suggest a claimed limitation of independent claims 31 and 43, the Examiner's rejection should be withdrawn in view of the amendment to claims 31 and 43. Applicants respectfully request allowance of these claims.

In view of the above, it is believed that the application is in condition for allowance and notice to this effect is respectfully requested. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the telephone number indicated below.

Respectfully Submitted,



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